

Site-specific

Resident Equation Inputs for Settled Dust

Variable	Value
TR (target cancer risk) unitless	0.0001
t_{res} (time - resident) yr	26
ED _{res} (exposure duration - resident) yr	26
F _i (fraction time spent indoors) unitless	1
k (dissipation rate constant) yr ⁻¹	0.0
EF _{res} (exposure frequency - resident) day/yr	350
EF _{res-c} (exposure frequency - resident child) day/yr	350
EF _{res-a} (exposure frequency - resident adult) day/yr	350
F _{AM} (area and material factor) unitless	1
ET _{res} (exposure time) hr/day	24
F _{OFFSET} (off-set factor) unitless	1
F _i (fraction of time spent in compartment) unitless	1
IFD _{res-adj} (age-adjusted dust ingestion rate - resident) cm ²	3200400
FTSS _h (fraction transferred surface to skin - hard surface) unitless	0.5
FTSS _s (fraction transferred surface to skin - soft surface) unitless	0.1
SE (saliva extraction factor) unitless	0.5
SA _{res-c} (surface area of fingers - resident child) cm ²	16
SA _{res-a} (surface area of fingers - resident adult) cm ²	49
ED _{res-c} (exposure duration - resident child) yr	6
ED _{res-a} (exposure duration - resident adult) yr	20
ET _{res-c-h} (exposure time - resident child hard surface) hr/day	6
ET _{res-c-s} (exposure time - resident child soft surface) hr/day	10
ET _{res-a-h} (exposure time - resident adult hard surface) hr/day	6
ET _{res-a-s} (exposure time - resident adult soft surface) hr/day	10
FQ _c (frequency of hand to mouth - child) event/hr	17
FQ _a (frequency of hand to mouth - adult) event/hr	3

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Resident Building PRGs for Settled Dust

Radionuclide	External		
	Ingestion BPRG TR=0.0001 (pCi/cm ²)	Exposure BPRG TR=0.0001 (pCi/cm ²)	Dust BPRG TR=0.0001 (pCi/cm ²)
*Secular Equilibrium BPRG for Am-241	1.96E-02	7.95E+00	1.96E-02
*Secular Equilibrium BPRG for Co-60	8.20E-01	1.84E+00	5.67E-01
*Secular Equilibrium BPRG for Cs-137	7.34E-01	7.92E+00	6.72E-01
*Secular Equilibrium BPRG for Eu-152	5.17E-01	3.91E+00	4.57E-01
*Secular Equilibrium BPRG for Eu-154	1.23E+00	3.65E+00	9.21E-01
*Secular Equilibrium BPRG for H-3	-	-	-
*Secular Equilibrium BPRG for Pu-239	1.84E-02	6.98E+00	1.84E-02
*Secular Equilibrium BPRG for Ra-226	5.49E-03	2.64E+00	5.48E-03
*Secular Equilibrium BPRG for Sr-90	2.31E-01	2.35E+02	2.31E-01
*Secular Equilibrium BPRG for Th-232	1.08E-02	2.01E+00	1.07E-02
*Secular Equilibrium BPRG for U-235	2.13E-02	6.98E+00	2.12E-02

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Resident Risk for Settled Dust

Radionuclide	Ingestion Risk	External Exposure Risk	Total Risk
*Secular Equilibrium Risk for Am-241	2.29E-04	5.66E-07	2.30E-04
*Secular Equilibrium Risk for Co-60	2.20E-04	9.81E-05	3.18E-04
*Secular Equilibrium Risk for Cs-137	2.45E-04	2.28E-05	2.68E-04
*Secular Equilibrium Risk for Eu-152	3.48E-04	4.61E-05	3.94E-04
*Secular Equilibrium Risk for Eu-154	1.46E-04	4.93E-05	1.96E-04
*Secular Equilibrium Risk for H-3	-	-	-
*Secular Equilibrium Risk for Pu-239	2.44E-04	6.45E-07	2.45E-04
*Secular Equilibrium Risk for Ra-226	8.20E-04	1.71E-06	8.22E-04
*Secular Equilibrium Risk for Sr-90	7.81E-04	7.67E-07	7.82E-04
*Secular Equilibrium Risk for Th-232	4.18E-04	2.24E-06	4.20E-04
*Secular Equilibrium Risk for U-235	2.12E-04	6.45E-07	2.12E-04
*Total Risk	3.66E-03	2.23E-04	3.89E-03

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Resident Equation Inputs for 3-D Direct External Exposure

Variable	Value
TR (target cancer risk) unitless	0.0001
t_{res} (time - resident) yr	26
F_{AM} (area and material factor) unitless	1
$F_{OFF-SET}$ (off-set factor) unitless	1
EF _{res} (exposure frequency) day/yr	350
ED _{res} (exposure duration - resident) yr	26
ET _{res} (exposure time - resident) hr/day	24
GSF _b (building gamma shielding factor) unitless	1
F_{sm} (area and materials factor) unitless	1
F_{in} (fraction time spent indoors) unitless	1
F_c (fraction of time spent in compartment) unitless	1
Room material	Composite1
Room size (ft)	10 x 10 x 10
Room position	Average

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Resident Building PRGs for 3-D Direct External Exposure

Isotope	Soil Volume		Soil Volume		Ground Plane BPRG
	Soil Volume BPRG	@ 1cm BPRG	Soil Volume BPRG	@ 5cm BPRG	
	TR=0.0001 (pCi/g)	TR=0.0001 (pCi/g)	TR=0.0001 (pCi/g)	TR=0.0001 (pCi/g)	TR=0.0001 (pCi/cm ²)
*Secular Equilibrium BPRG for Am-241	2.37E+00	5.11E+00	1.93E+00	1.41E+00	4.20E+00
*Secular Equilibrium BPRG for Co-60	2.17E-01	7.48E-01	2.21E-01	1.47E-01	9.96E-01
*Secular Equilibrium BPRG for Cs-137	1.94E+00	6.68E+00	1.93E+00	1.35E+00	8.68E+00
*Secular Equilibrium BPRG for Eu-152	4.99E-01	1.35E+00	4.43E-01	2.88E-01	1.49E+00
*Secular Equilibrium BPRG for Eu-154	5.30E-01	1.45E+00	4.75E-01	3.19E-01	1.76E+00
*Secular Equilibrium BPRG for H-3	-	-	-	-	-
*Secular Equilibrium BPRG for Pu-239	2.53E+00	6.16E+00	2.49E+00	1.81E+00	5.32E+00
*Secular Equilibrium BPRG for Ra-226	4.30E-01	1.64E+00	4.78E-01	3.14E-01	2.09E+00
*Secular Equilibrium BPRG for Sr-90	5.53E+06	9.34E+06	4.64E+06	5.45E+06	1.75E+06
*Secular Equilibrium BPRG for Th-232	2.17E-01	8.70E-01	2.58E-01	1.60E-01	9.87E-01
*Secular Equilibrium BPRG for U-235	2.53E+00	6.16E+00	2.49E+00	1.81E+00	5.32E+00

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Resident Risk for 3-D Direct External Exposure

Isotope	Soil Volume				
	Soil Volume	Ground Plane Risk	@ 1cm Risk	@ 5cm Risk	@ 15cm Risk
	Risk	Risk	Risk	Risk	Risk
*Secular Equilibrium Risk for Am-241	2.57E-05	1.07E-06	1.19E-05	3.15E-05	4.31E-05
*Secular Equilibrium Risk for Co-60	1.12E-03	1.81E-04	3.26E-04	1.10E-03	1.66E-03
*Secular Equilibrium Risk for Cs-137	1.25E-04	2.08E-05	3.64E-05	1.26E-04	1.80E-04
*Secular Equilibrium Risk for Eu-152	4.88E-04	1.21E-04	1.81E-04	5.49E-04	8.47E-04
*Secular Equilibrium Risk for Eu-154	4.60E-04	1.02E-04	1.67E-04	5.13E-04	7.64E-04
*Secular Equilibrium Risk for H-3	-	-	-	-	-
*Secular Equilibrium Risk for Pu-239	2.40E-05	8.46E-07	9.89E-06	2.44E-05	3.36E-05
*Secular Equilibrium Risk for Ra-226	1.42E-04	2.15E-06	3.72E-05	1.27E-04	1.94E-04
*Secular Equilibrium Risk for Sr-90	4.40E-11	1.03E-10	2.61E-11	5.29E-11	4.47E-11
*Secular Equilibrium Risk for Th-232	2.81E-04	4.56E-06	7.00E-05	2.36E-04	3.81E-04
*Secular Equilibrium Risk for U-235	2.40E-05	8.46E-07	9.89E-06	2.44E-05	3.36E-05
*Total Risk	2.69E-03	4.35E-04	8.49E-04	2.73E-03	4.14E-03